

CLAIMS:

1. Roller for use in the thermal pressure treatment of web-type media such as paper or similar non-wovens, provided with an inner heating system that uses a fluid heat transfer medium, comprising a roller base body (1) made of steel with a material layer (3) that is applied to its surface and is relatively thin in comparison with the base body, and comprising axially parallel peripheral bores (4) that are arranged in the base body, equidistant from the roller axis and equidistant (8) from one another, or canals created in some other manner, designed to carry the fluid heat transfer medium,

characterized in that

- the roller base body is made of a tempered and hardened forged steel or an alloyed cast iron having a hardness of at least 400 HV and no more than 620 HV,
 - the distance (5) of the peripheral bores from the roller surface (6), measured to the point (7) on the individual bore that is closest to the roller surface, is greater than 50 mm,
 - the outer material layer (3) is a hard wearing layer, such as hard chrome, hard metal, carbide or ceramic, and has a minimum hardness of 600 HV, and
 - between the outer wearing layer (3) and the roller base body (1) is an intermediate layer (2) having a thermal expansion coefficient that is between those of the outer wearing layer and the roller base body.
2. Method of thermal pressure treatment of web-type media such as paper or similar non-wovens in a multi-roller calender

characterized in that

- of the hard rollers used in a calender of this type, at least one is a roller as specified in claim 1,
- the surface temperature of this roller is greater than 140° C and its heating capacity relative to the web of material to be processed lies above 35 kw/m²,
- the operating speeds of the calender are greater than 1200 m/min.,
- the line pressures in the roller gap adjacent to the roller specified in the invention are greater than 250 kn/m, and
- webs of material weighing more than 45 g/m² with moisture content levels of more than 5% are processed.